DOL'BERG, A.L.; GRISHAYEVA, A.S.

Nitration of mineral oils. Khim. i tekh. topl. i masel 9 no.1:27-32 Ja '64. (MIRA 17:3)

1. Moskovskiy zavod "Neftegaz".

PEKAR', P.P., starshiy nauchnyy sotrudnik; SHEVCHENKO, L.A. (Bobrinets) GUN, S.I. (Genichesk); KYBINA, N.A. (Novo-Ukrainka); PASECHNIKOVA, I.G. (Bereznigovatoye); MATVEYEVA, Ye.M. (ARBUZINKA); PODOL'SKIY, L.G. (Starokazatskoye); GRISHAYEVA, A.P. (Peschanoye); PYATOVA, A.S. (Varvarovka)

Efficacy of artificial pneumothorax in pulmonary tuberculosis patients under rural conditions. Probl. tub. no.8:71-75'62. (MIRA 16:9)

1. Iz Odesskogo nauchno-issledovatel'skogo instituta tuberkuleza (dir. - starshiy nauchnyy sotrudnik M.A.Yerusnikin).

GRISHAYEV, V.I.; BARYSHNIKOV, A.I., retsenzent; VELICHKIN, Ye.A., inzh., red.; KHITROVA, N.A., tekhn. red.

[Railroad tunnels] Zheleznodorozhnye tonneli. Moskva, Transzheldorizdat, 1963. 382 p. (MIRA 16:9)

1. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Baryshnikov).

(Tunnels)

GRISHAYEV, Vasiliy Iosifovich; GARBUZOV, A.A., inzh., retsenzent; KARAMYSHEV, I.A., inzh., red.; USENKO, L.A., tekhn. red.

[Ventilation of railroad tunnels] Ventiliatsiia tonnelei na zheleznykh dorogakh. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1961. 122 p. (MIRA 14:7)
(Tunnels--Ventilation)

GRISHAYEV, V.D.

Public inspectors of the Donets railroad. [illegible] sviaz' 8 no.9:32-33 S '64. (MIRA 17:10)

1. Starshiy inzh. sluzhby signalizatsii i svyazi Donetskoy dorogi.

L 24209-66 EWT(1)/T JK

ACC NR: AP6015174 (A, N) SOURCE CODE: UR/0346/65/000/010/0023/0025

25
B

AUTHOR: Grishayev, N. Ye. (Aspirant)

ORG: All-Union Institute of Experimental Veterinary Medicine (Vsesoyuznyy institut eksperimental'noy veterinarii)

TITLE: Effect of cultivation time of cultures of Clostridium perfringens type B and D on their immunogenic properties

SOURCE: Veterinariya, no. 10, 1965, 23-25

TOPIC TAGS: rabbit, experiment animal, bacteria, bacteriology, blood serum, immunology

ABSTRACT: Experiments on rabbits and guinea pigs showed that anacultures prepared from 12- and 18-hour cultures of Cl. perfringens Type B (strain LD-1) and 6- and 12-hour cultures of a strain LD-4 had the most pronounced immunogenic properties. Blood sera of rabbits and guinea pigs which were immunized with anacultures of Cl. perfringens Type D prepared from 18-hour cultures of Strain No 213 contained 2-3 times more epsilon-antitoxin than those inoculated with vaccine prepared from 6- and 12-hour cultures of the same strain. The immunogenicity of anacultures of Cl. perfringens Type D (Strain No 213) depends on the amount of epsilon-toxin contained in the cultures. The more toxin is converted into anatoxin, the more active the vaccine. Orig. art. has: 2 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 009

Card 1/1 BLG UDC: 619: 616.981.55-093.3

GRISHAYEV, N.Ye., aspirant

Effect of the rate of cultivating types A and B of Clostridium perfringens on their immunogenic properties. Veterinariia 42 no.10:23-25 O '65. (MIRA 18:10)

1. Vsesoyuznyy institut eksperimental'noy veterinarii.

GRISHAYEV, N.Ye.

Drugs used in pasteurellosis. Veterinariia 38 no.9:32 S '61.
(MIRA 16:8)

1. Glavnyy veterinarnyy vrach Chulymskogo sovkhoza, Krasnoyarskiy kray.

GRISHAYEV, N.N.

Operating heavy-duty bridge cranes. Vest.mash. 40 no.4: 19-21 Ap '60. (MIRA 13:6)
(Cranes, derricks, etc.)

GRISHAYEV, N.N.

RAYKO, V.V.nauchnyy sotrudnik; VOLKOV, Yu.R.nauchnyy sotrudnik; LEVITSKIY, D.A.nauchnyy sotrudnik; KHODAK, A.N.nauchnyy sotrudnik; RATNER, Yu.Z. inzhener; VORODIMOV, N.I.inzhener; GRISHAYEV, N.N.inzhener; SHULYATSKIY, D.I., inzhener, redaktor; ANDREYEV, S.A., tekhnicheskiy redaktor

[Rules for the technical operation of cranes] Pravila tekhnicheskoi ekspluatatsii pod" emnykh kranov. Khar'kov, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 167 p. (MLRA 10:5)

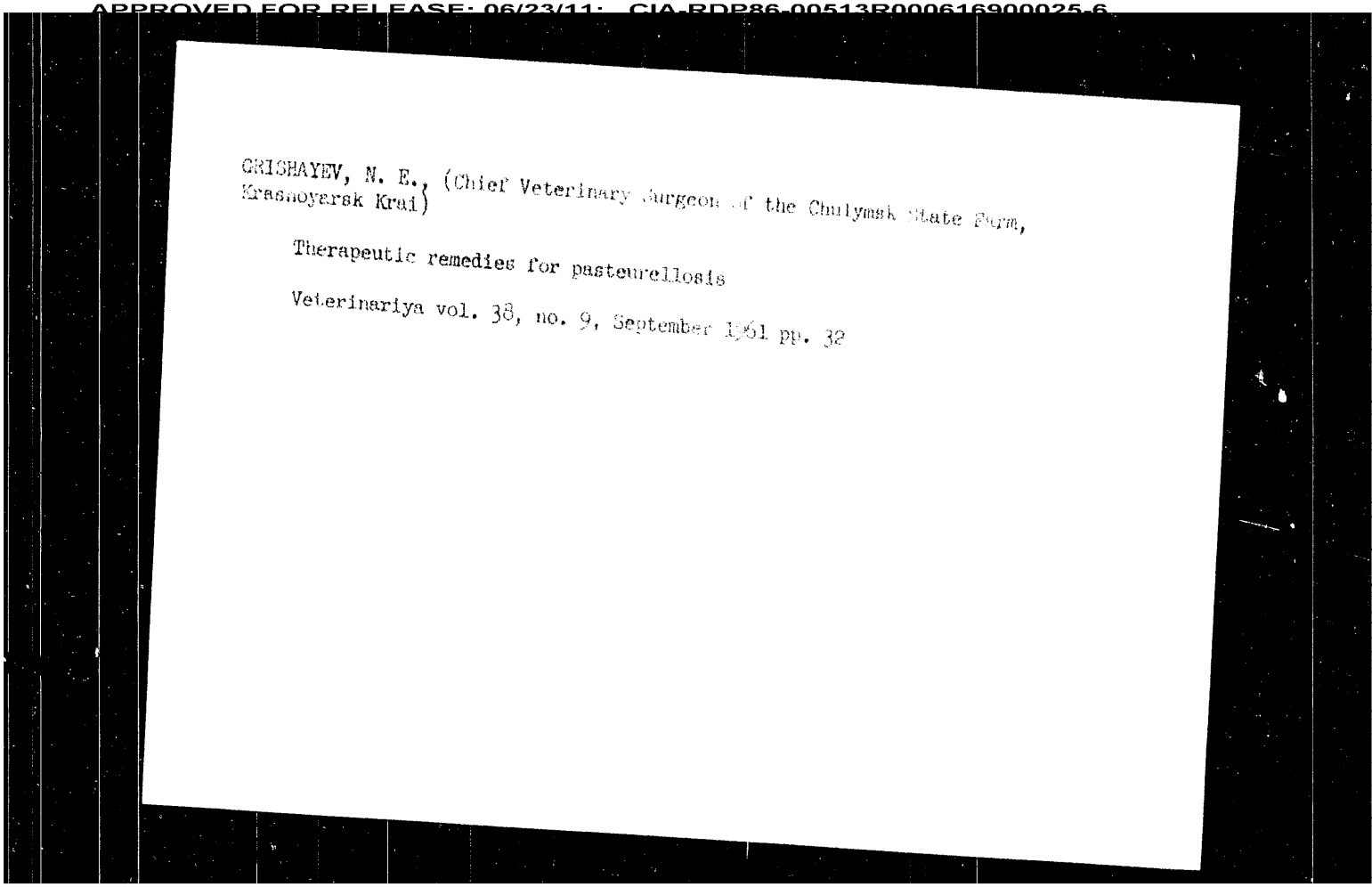
1. Russia (1923 U.S.S.R.) Ministerstvo chernoy metallurgii. 2. Vsesoiyznyy nauchno-issledovatel'skiy institut organizatsii chernoy metallurgii (for Rayko, Volkov, Levitskiy, Khodak) 3. Otdel glavnogo mekhanika Ministerstva chernoy metallurgii. (for Shulyatskiy) 4. Zavod "Azovstal'" (for Ratner) 5. Zavod "Zaporozhstal'" (for Vorodimov, Grishayev)

(Cranes, derricks, etc.)

GRISHAYEV, N. E., (Veterinary Surgeon, Chilymsk State Farm, Krasnoyarsk Krai)

The use of the penicillin-calcium salt

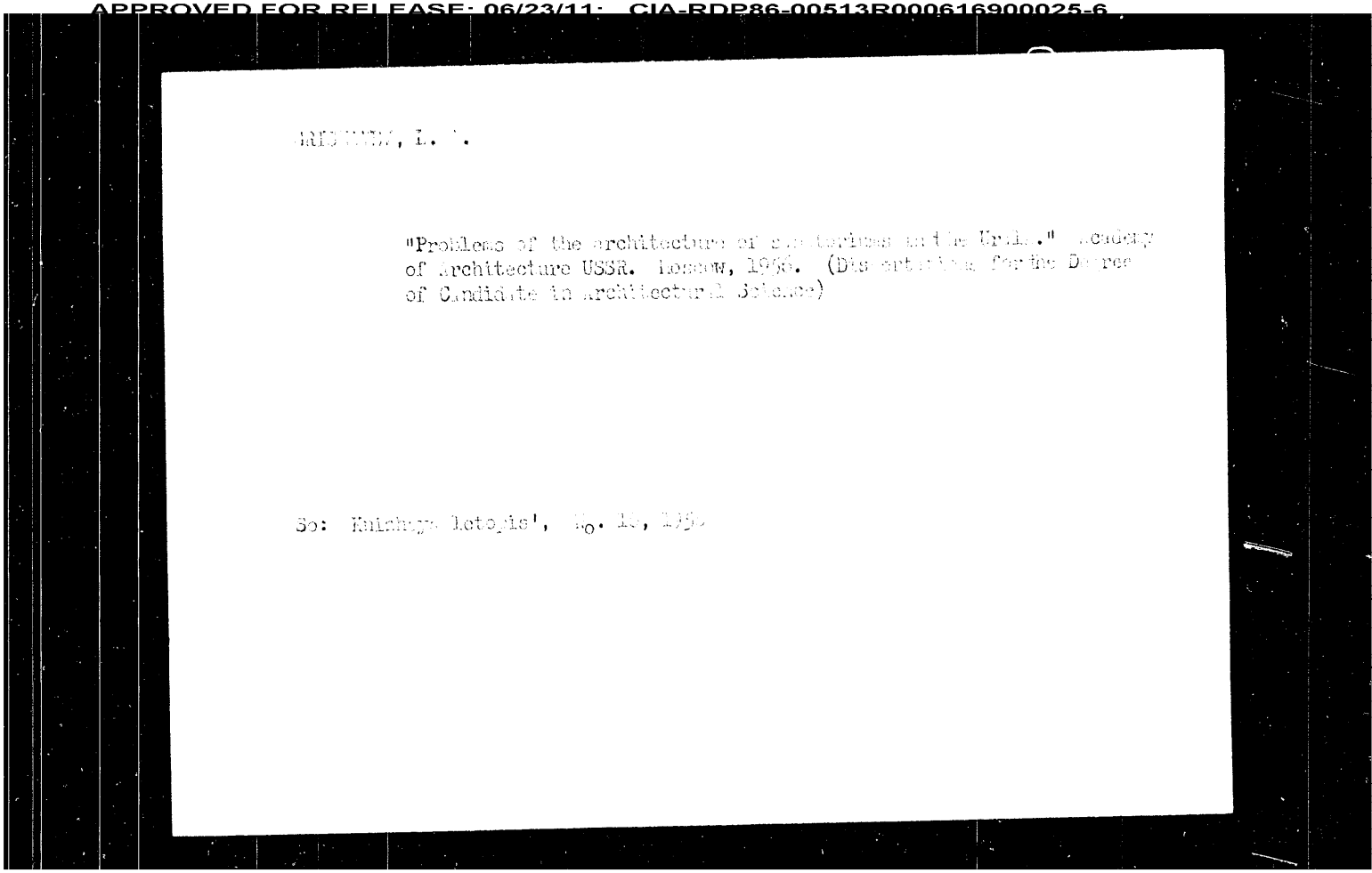
Veterinariya vol. 38, no. 10, October 1961, pp. 81-89



GRISHAYEV, N. E., (Chief Veterinary Surgeon of the Chulymsk State Farm, Krasnoyarsk Krai)

Therapeutic remedies for pasteurellosis

Veterinariya vol. 38, no. 9, September 1961 pp. 32



[illegible], I. [illegible].

"Problems of the architecture of [illegible] in the Ural." Academy of Architecture USSR. Moscow, 1956. (Dis[illegible] for the Degree of Candidate in Architectural Sciences)

So: Knizhnaya letopis', No. 15, 1956

L 46163-65

ACCESSION NR: AT5007930

2

out by means of one injector. "The design and parameters of the one injector was the concern of V. A. Vishnyakov and associates." Orig. art. has: 5 figures, 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-technical Institute, AN UkrSSR); Nauchno-issledovatel'skiy institut elektro-fizicheskoy apparatury imeni D. V. Yefremova GKAE SSSR (Scientific-research Institute of Electro-Physical Equipment GKAE SSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP

NO REF SOV: 000 OTHER: 000

Card 3/3

L 46163-65
ACCESSION NR: AT5007930

tation of the klystrons is carried out from a common wave-guide line, which is supplied from a high power klystron excited by a regulated master oscillator. The group velocity of the electromagnetic wave in the excitation line is equal to about 0.805 c. The constant phase of the electromagnetic wave at klystron output is maintained by a phasing system with an accuracy of $\Delta\phi = \pm 2^{\circ}$. The accelerating sections are installed in a special bunker which has a concrete wall-like shield and is covered on top by sectional reinforced-concrete slabs. The output installation is shielded by a special earthen enclosure covered by reinforced-concrete slabs. Purification of the beam from harmful admixtures is carried out by means of a magnetic parallel transfer system and magnetic separators. The present report discusses the parameters of the main units, such as: the injector, the vacuum system ($2 \cdot 10^{-6}$ mm/Hg), the accelerator's high-frequency pulsed power supply, the output installation, the formation and measurement of the beam, the control of the accelerator. It is planned to store the electrons and positrons which are obtained by the present accelerator in a suitable ring, but experience must first be gained with small storage rings and colliding beams, under study at the Physico-technical Institute, Academy of Sciences, Ukrainian SSR. The present accelerator was constructed in accordance with the principle of uniform structure, but not constant field. The entire adjustment phase of the large accelerator's operation is carried

Card 2/3

L 46163-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pt-7/Pab-10 IJP(c) OS

ACCESSION NR: AT5007930 S/0000/64/000/000/0420/0424

AUTHOR: Val'ter, A. K.; Grishayev, I. S.; Yeremenko, Ye. V.; Kondratenko, V. V.; Zeytlenok, G. A.; Kuznetsov, G. F.; Levin, V. M.; Malyshev, I. F.; Rumyantsev, V. V.; Semenov, A. N.; Turkin, F. F.; Khokhlov, V. K.

TITLE: Linear traveling-wave accelerator of electrons with output energy 2 Gev

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 420-424

TOPIC TAGS: high energy accelerator, traveling wave electron accelerator, klystron

ABSTRACT: The accelerator consists of an injector and 49 accelerating sections each 4.5 meters long. The accelerator operates with a traveling $1/2\pi$-wave with constant phase velocity equal to the velocity of light c and group velocity equal to $0.04c$. The operating frequency of the accelerator is 2797 mc for a temperature of the accelerating section equal to 37°C. The energy of the accelerated electron beam is 2 Gev, the mean current is 1.2 μamp for a transmission frequency of 50 times per second and duration of the high-frequency pulse of $\tau = 2$ msec. The high-frequency power supply for each section is independent of the klystron amplifier. The exci-

Card 1/3

GRIGHAYEV, I. D., (Veterinary Surgeon, Razdol'sk State Farm, Tyumen Oblast')

The efficacy of the camphorated serum in calve pasteurellosis

Vete inariya vol. 38, no. 10, October 1961, pp. 81-89

ACC NR: AP3036033

and the damping constant of the unloaded [illegible]. It is shown that the last factor can be neglected in practical calculations. A formula is derived for the energy spread of the beam as a function of [illegible] and the other factors mentioned above. The energy spread [illegible] L(c - v)/cv, where L is the length [illegible] velocity, and v is the group velocity of the wave. [illegible] the pulse (rather than the charge density) is held constant, the energy spread decreases monotonically with decreasing pulse duration. For injection of electrons into a storage ring, the energy spread can be significantly reduced when capture into the orbit takes place during a time interval that is shorter than the pulse duration. A good spectrum can also be obtained under conditions of considerable loading by cutting off the initial portion of the beam with a pulsed magnet. The authors thank [illegible] and L.A. Makhenko for discussions. Orig. art. has: 10 formulas and 3 figures.

SUB CODE: 20/ SUBM DATE: 13Dec65/ ORIG REF: 003/ OTH REF: 002/
ATD PRESS: 5106

Card 2/2

ACC NR: AP6035033 SOURCE CODE: UR/0057/66/036/011/2013/2016

AUTHOR: Grishayev, I. A.; [illegible]

ORG: None

TITLE: Beam loading of a linear [illegible] under resonance conditions

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 11, 1966, 2013-2016

TOPIC TAGS: linear accelerator, electron [illegible] distribution, particle storage ring, particle injection

ABSTRACT: E.L.Burshteyn and G.V.[illegible] (Zh. tekh. fiz., 31, No.3, 1961; Atomnaya energiya, 15, No.5, [illegible]) have investigated the stationary effects associated with the beam loading of a linear [illegible] being for this purpose their expressions for the resonance field proposed by [illegible]. The present authors obtain the same results more simply from the [illegible] equation. A formula is derived for the energy acquired by an electron in traversing a section of the accelerator as a function of the length of the section, the time of injection, the high frequency power supplied to [illegible] velocity of the electrons, the group velocity of the waves, the [illegible] resonance field in the accelerator to the high frequency [illegible] velocity of the beam,

UDC: 621.384.62

Card 1/2

L 26920-65
ACCESSION NR: AP5004001

7

Shabalin, A. E. Kost', A. M. Parlaga, N. P. Mazyukevich, M. P. Lorikyan, P. A. Medvedkov, and V. I. Startsev." Orig. art. has: 8 figures.

ASSOCIATION: None

SUBMITTED: 18Nov63 ENCL: 00 SUB CODE: NP

NR REF SOV: 004 OTHER: 013

Card 4/4

7

"Nekotoryye problemy sovremennoy fiziki yadra i elementarnykh chastits [Some Problems of Modern Physics of the Nucleus and of Elementary Particles], L'vov, State University Press, 1957, p. 89 and p. 55), are used to calculate the excitation functions of (γ, n) reactions for O^{16} and Cu^{63}. Results are compared with data by other authors, obtained with thin samples irradiated by bremsstrahlung gamma quanta, and are found to agree with the latter. It is noted in conclusion that in addition, the excitation functions of (γ, n) reactions in Cu^{63}, obtained by various methods from data on the photoneutron yield from thick samples in the giant-resonance region, are in reasonable accordance with each other. "The authors thank all the co-workers of the Fiziko-tekhnicheskiy institut (Physico-technical Institute) AN UkrSSR and the Department of Nuclear Physics of the Uzhgorod State University, who participated in the preparation, setup, and discussion of the experiments described, and also in the calculations, especially to A. K. Val'ter, V. I. Gol'danskiy, A. A. Krasnikov, V. V. Petrenko, G. L. Fursova, I. K. Nad', L. A.

mg/cm^2), each containing 10 foils 40 mm in diameter. The purpose of the experiment was to compare the resultant yield, obtained with a target thick enough to absorb completely the photons that are active in the (γ, n) reaction with the photoneutron yield calculated by the cascade theory using the known cross section of the (γ, n) reaction in the investigated nucleus. Conversely, from the experimental value of the photoneutron yield it is possible to calculate the cross section of the (γ, n) reaction and compare it to the values obtained by other methods where the results of the cascade theory are not employed. The monoenergetic bombarding electrons were obtained from the linear accelerator of the Fiziko-tekhnicheskiy institut (Physicotechnical Institute) AN UkrSSR. The data obtained, using electron energies up to 66 MeV, on photoneutrons produced in water by the (γ, n) reaction in O^{16}, show that the use of the equilibrium spectrum of photons is justified in the case of light elements. On the basis of these data and of the Belen'kiy-Tamm theory as developed in earlier papers by one of the authors (Shkoda-Ul'yanov, Collection:

L 26920-65 EWT(m) DIAAP DM
ACCESSION NR: AP5004001 S/0089/65/018/001/0028/0033

AUTHORS: Grishayev, I. A.; Sikora, D. I.; Shkoda-Ul'yanov, V. A.; Shramenko, B. I.

TITLE: Measurement of the photoneutron yield from copper and water targets of large thickness, and determination of the excitation functions of the (Gamma, n) reactions for O^{16} and Cu^{63} with the aid of the Belen'kiy-Tamm equilibrium photon spectrum

SOURCE: Atomnaya energiya, v. 18, no. 1, 1965, 28-33

TOPIC TAGS: photoneutron yield, excitation function, gamma neutron reaction, neutron reaction, photon spectrum, oxygen, copper

ABSTRACT: The photoneutron yield from samples of copper and water of practically infinite thickness, induced by electrons with energies up to 66 MeV, were measured with a secondary-emission monitor consisting of two stacks of aluminum foils of equal thickness (2.7

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L 47383-65

ACCESSION NR: AP5007685

sections. The conversion factor of electrons into positrons is $2 \cdot 10^{-6}$ positrons/electron at the peak, which produces $1.03 \cdot 10^{6}$ positrons per pulse over a $\pm 10\%$ energy range. Orig. art. has: 3 figures and 4 formulas. [08]

ASSOCIATION: Fizyko-tekhnichnyy instytut AN URSR, Khar'kov (Institute of Physics and Technology, AN URSR)

SUBMITTED: 11Jun64 ENCL: 01 SUB CODE: NP

NO REF SOV: 000 OTHER: 005 ATD PRESS: 3251

Card 2/3

L 47383-65 EWI(m)/EPA(w)-2/EWA(m)-2 Pab-10/Pt-7 IJP(c)

ACCESSION NR: AP5007685 S/0185/65/010/003/0260/0262

AUTHOR: [redacted] (Grishayev, I.A.); Lytvynenko, A.S. (Litvinenko, A.S.); Nykyforov, [redacted] (Nikiforov, [redacted]); Fysun, A.M. (Fisun, A.N.)

TITLE: Production of accelerated positron beams on a linear electron accelerator

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 3, 1965, 260-262

TOPIC TAGS: linear electron accelerator, positron beam, accelerated positron, tantalum converter

ABSTRACT: The production of an intense positron beam is of great importance since it enables one to solve a number of important physical problems, such as the production of monoenergetic photons through annihilation of positrons, study of the surface structure of nuclei and nucleons and the effects of the second Born approximation by comparing the scattering of positrons and electrons, etc. This article describes the preliminary experiments on the production of accelerated positron beams on a linear electron accelerator. The general circuit of the experimental set-up is shown in Figure 1 of the Enclosure. An accelerated electron beam is directed at a tantalum converter. The electron-positron pairs which are produced are captured by the subsequent accelerator

Card 1/2

L 47312-65

ACCESSION NR: AT5007922

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute, AN UkrSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: EE, NP

NO REF SOV: 000 OTHER: 000

Card 5/5

L 47312-65

ACCESSION NR: AT5007922

the stability of the magnetic field of the inflector are: $\Delta H_I/H_I = 10\%$, $\Delta H_{II}/H_{II} = 3\%$. Taking into consideration the indicated quantities, the maximum values of the curvature of the radial betatron oscillations will be equal respectively to $F_I = 2.8$ cm, $F_{II} = 4.1$ cm. According to computations, the equilibrium dimensions of the beam must be $a_z = 0.04$ cm; $a_r = 0.2$ cm. Due to the quantum fluctuations in synchrotron radiation, the longitudinal dimension of the particle bunch equals 40 cm for a gap voltage of about 1.5 kilovolts. The mean energy expended on an electron per revolution, taking into account the coherent radiation, is equal to 220 electron-volts. The time of oscillation damping amounts to 100 msec. Alternate injection of the beam of electrons in the ring is effected by three sector magnets with double focusing. The introduction of a beam turned away from the accelerator and with zero initial conditions is ensured by the application of a cylindrical magnetic shield with a shielding coefficient varied along the length. All the magnets are supplied with power from sources that have a current stability of at least 0.02%. The report also discusses the vacuum chamber, voltage generator, and a few other aspects of the apparatus. Orig. art. has: 5 figures, 2 tables.

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L 47312-65

ACCESSION NR: AT5007922

orders are indicated in the diagram and discussed. The selected operating point is at a maximum distance from the resonances; in this case the frequencies of betatron radial and vertical (axial) oscillations are respectively equal to $\nu_r = 1.145$; $\nu_z = 0.6956$. The internal dimensions of the vacuum chamber were 100 × 40 mm. The determining problem here was the conditions governing the beam input into the storage device. The beam is fed to an inflector through a magnetic channel. The initial conditions are so chosen that the beam can by-pass in the first six revolutions the inflector set a distance of 2.25 cm from the equilibrium orbit. The behavior of the storage device in the first six revolutions is described. In case the trailing edge of the magnetic field pulse lasts for three revolutions of the particles in the storage device, the introduction of particles into the chamber can also be prolonged in the course of three revolutions. In order to capture particles in the storage device it is necessary to create with the help of inflector magnets a magnetic field strength of $H_I = 1900$ oersteds, $H_{II} = 2630$ oersteds. The system of tolerances is evaluated on the assumption of the following parameters for the input beam: width $a = 0.5$ cm, height $b = 0.3$ cm, angular divergence: radial $\Delta\gamma_r = 2 \cdot 10^{-3}$ and vertical $\Delta\gamma_z = 5 \cdot 10^{-4}$. Preliminary measurements indicate that this data can be realized in the case of the Institute's apparatus. The requirements on

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L 47312-65

ACCESSION NR: AT5007922

many problems can be solved. The most convenient storage design is a system of race-tracks with a common linear section in which the collision of the two beams is effected. A distinctive property of the Institute's storage device is the great lengths of the linear sections, equal to 50 and 80 cm for a radius of revolution of 50 cm. The great length of one pair of linear sections in each of the rings was selected in order to provide for measurement of the minimum angle of scattering. Selection of a small radius of revolution was due to the requirement of minimum equilibrium dimensions of the beam and to the tendency to have a not too long time for damping of the beam oscillations. To localize the region of interaction, the beam orbits are distorted in the vertical plane by means of two "intersecting" magnets that create a homogeneous field in the radial direction. The magnets are arranged in the common linear section. The length of each of the "intersecting" magnets equals 10 cm, and the magnetic field strength is up to 640 oersteds. The magnets deflect the equilibrium orbit by 1 cm from the median plane. The quadrants have a constant magnetic field index of $n = 0.425$. The coupled magnets in the section that is common for both orbits have zero gradient; the index in the remaining sections is $n_1 = 0.450$. The stability of the Institute's system is characterized by a diagram showing field index n in the quadrants versus the field index n_1 in the coupled magnets. The regions of stability and resonance lines of various

Card 2/5

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L 44338-65 EPA(w)-2/EWT(1)/EEC(t)/EWA(m)-2 Pi-4/Pz-6 IJP(c) AT/GS

ACCESSION NR: AT5007922 S/0000/64/000/000/0295/0299

51
B+1

AUTHOR: Val'ter, A. K.; Grigor'yev, Yu. N.; Dudkina, I. N.; Ivanov, V. F.; Il'in, O. G.; Koba, I. I.; Kondratenko, V. V.; Mocheshnikov, N. I.; Tarasenko, A. S.; Terekhov, B. A.; Tolstov, A. Ye.; Shenderovich, A. M.; Grishayev, I. A.

TITLE: The apparatus of the Physicotechnical Institute, Academy of Sciences, Ukrainian SSR, for colliding electron beams with energies of 200 × 100 Mev for experiments on the scattering of electrons on electron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 295-299

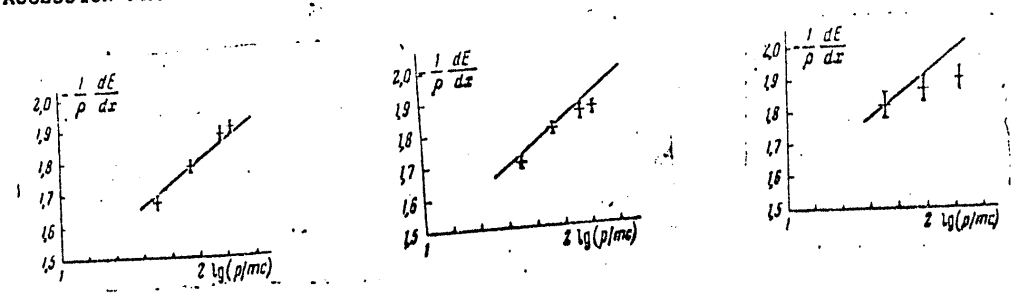
TOPIC TAGS: high energy accelerator, high energy plasma, particle beam, particle physics, charged particle beam

ABSTRACT: Work on colliding electron beams in the Physicotechnical Institute, Academy of Sciences, Ukrainian SSR, was begun in 1960. The existence of linear electron accelerators was basic for the initiation of such work. At the first stage, it was decided to stop at electron storage devices of 100 Mev energy, since it was found that even at such comparatively small energies of the colliding beams

Card 1/5

ACCESSION NR: AP4031140

ENCLOSURE: 01



Theoretical curves and experimental values (+) of electron energy loss in a polystyrene film (film thickness, left to right: 10^{-5}, 2 x 10^{-5}, and 2 x 10^{-4} cm)

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ACCESSION NR: AP4031140

surements it is concluded that in the 20--8[illegible] Me[illegible] [illegible]nge the [illegible] ionization energy losses in pol[illegible] fil[illegible] [illegible]cknesse[illegible] to or less than the critical [illegible] [illegible]ment wi[illegible] theoretical prediction of G. [illegible] (Z[illegible] 527, [illegible] At thicknesses greater than [illegible] of th[illegible] [illegible] tion begins to be felt and [illegible] with [illegible]ick[illegible] "The [illegible]thors are grateful to Professor V. M. Kharitonov and V. [illegible] for help with the work, and to th[illegible] accelerator crew."

ASSOCIATION: Fizicheskiy in[illegible] Yerevan [illegible] GKAE). Fiziko-tekhnicheskiy in[illegible] AN U[illegible]SSR (Physicotechnical Institute AN UkrSSR)

SUBMITTED: 19Oct63 [illegible] ACQ: 07[illegible] ENCL: 01

SUB CODE: GP, NP [illegible] OTHER: 001

Card 2/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000616900025-6

ACCESSION NR: AP4031140 S/0056/64/0046/004/1212/1215

AUTHORS: Alikhanyan, A. I.; Val'ter, A. K.; Garibyan, G. M.; Grishayev, I. A.; Lorikyan, M. P.; Petrenko, V. V.; Fursov, G. D.

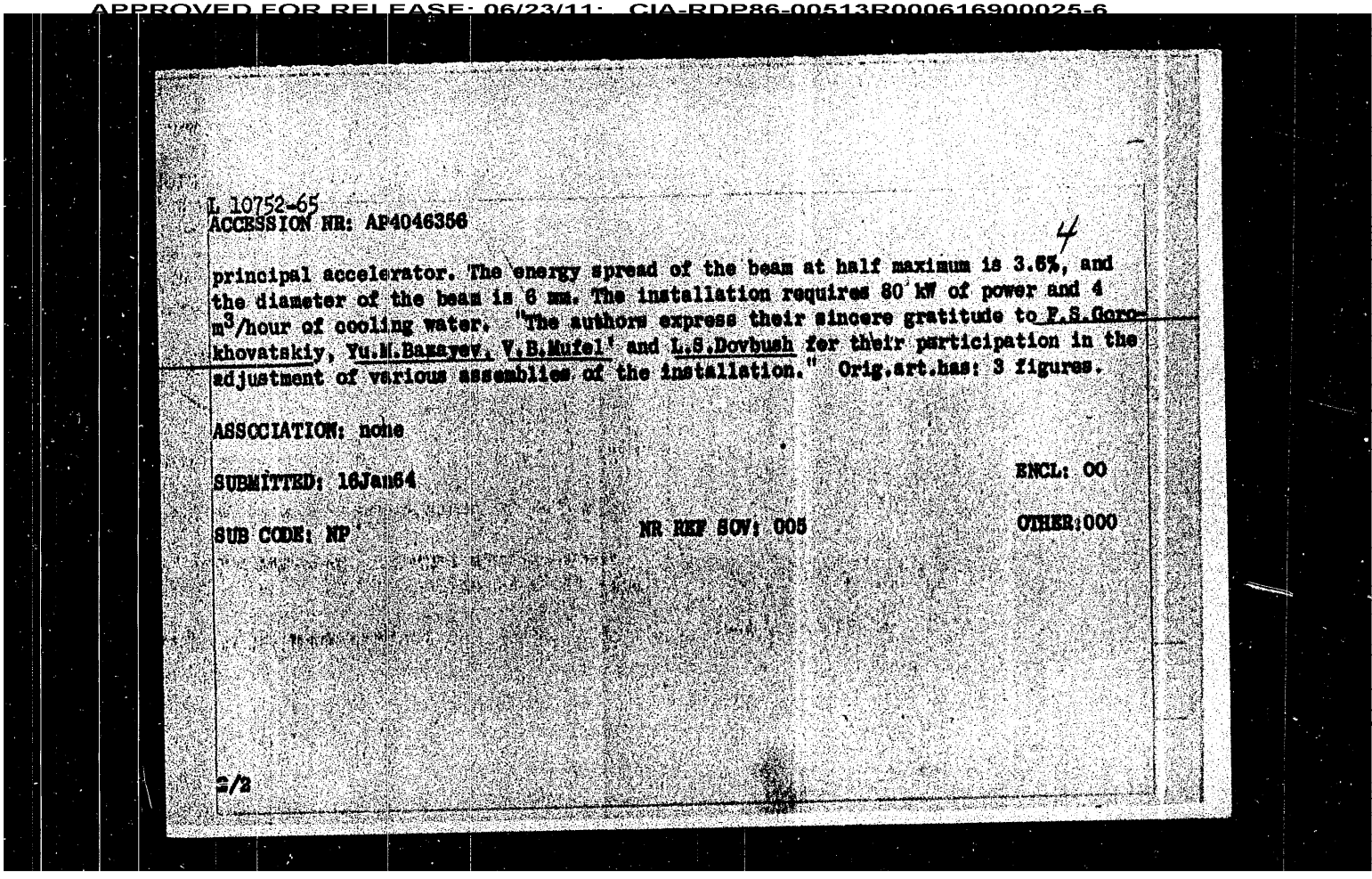
TITLE: Ionization energy losses of fast electrons in thin polystyrene layers

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1212-1215

TOPIC TAGS: polystyrene, ionization loss, electron bombardment, polarization

ABSTRACT: The dependence of the electron ionization energy loss on the electron momentum was investigated experimentally as a continuation of earlier work (ZhETF v. 44, 1122, 1963) with polystyrene films of different thickness. In the present work the polystyrene film thicknesses were 10^{-5}, 2×10^{-5}, and 2×10^{-4}. The measurement procedure is described. On the basis of these and the earlier mea-

Card 1/3



L 10752-65
ACCESSION NR: AP4046356

4

principal accelerator. The energy spread of the beam at half maximum is 3.6%, and the diameter of the beam is 6 mm. The installation requires 80 kW of power and 4 m^3/hour of cooling water. "The authors express their sincere gratitude to P.S.Gorokhovatskiy, Yu.N.Bazayev, V.B.Mufel' and L.S.Dovbush for their participation in the adjustment of various assemblies of the installation." Orig.art.has: 3 figures.

ASSOCIATION: none

SUBMITTED: 16Jan64 ENCL: 00

SUB CODE: NP NR REF SOV: 005 OTHER: 000

2/2

L 10752-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pt-10/Pab-24 IJP(c)/AFETR/BSD/SSD/ESD(gs)/AEDC(a)/ESD(t)/AFWL

ACCESSION NR: AP4046358 S/0057/64/034/010/1903/1905

AUTHOR: Grishko, V.M.; Vishnyakov, V.A.; Grishayev, I.A.; Yeremenko, Ye.V.; Kuznetsov, G.F.; Ostrovskiy, Ye.K.; Khvorostenko, V.I.

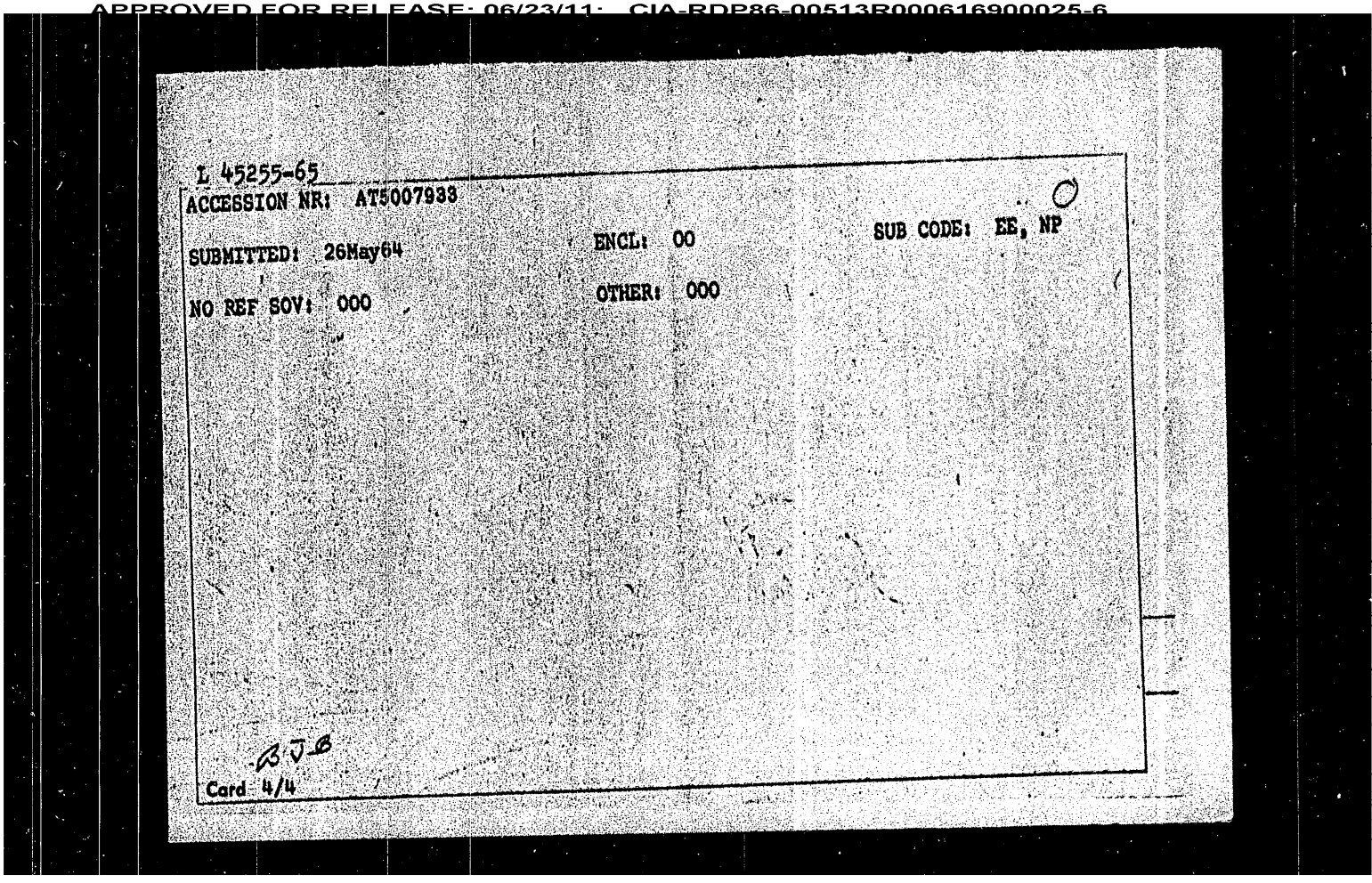
TITLE: A 40 MeV linear electron accelerator 19 B

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.10, 1964, 1903-1905

TOPIC TAGS: linear accelerator, electron accelerator

ABSTRACT: The authors briefly describe a linear accelerator which, operating at 2797.2 Mc/sec, produces 1.5 microsec, 80 mA pulses of 40 MeV electrons at repetition rates of up to 50/sec. The electrons are produced in a two-electrode gun with a tantalum cathode and are accelerated to 5 MeV in an 83 cm long injector containing an experimentally adjusted longitudinal magnetic field for focusing. The principal accelerator is a 450 cm long constant phase velocity iris waveguide. Each of the two sections is fed through a 72 x 34 mm^2 vacuum waveguide by a 20 megawatt klystron amplifier, each excited by the same magnetron oscillator. The working vacuum of better than 5×10^{-6} mm Hg is maintained by a battery of titanium pumps. The beam energy can be smoothly varied from 5 to 40 MeV by varying the power supplied to the

1/2



L 45255-65
ACCESSION NR: AT5007933

SUBMITTED: 26May64 ENCL: 00 SUB CODE: EE, NP

NO REF SOV: 000 OTHER: 000

BJB

Card 4/4

L 45255-65
ACCESSION NR: AT5007933

Experimental and theoretical studies of the processes of parasitic modulation have given their quantitative characteristics and established the criteria for the selection of transition parameters which practically eliminate these processes. Completely satisfactory phase-energy and current characteristics of the accelerated beam have been achieved. The report discusses in further detail the design of an injector electron accelerator; its pertinent investigations into: frequency characteristics, influence of initial electron energy, influence of accelerating field's potential, and influence of current charge; the quantities associated with the accelerator's beam: 10-μamp average current (120 ma/pulse), 6.5-Mev particle energy, 8% energy spread, 3-mm radius, beam divergence 10^{-3} radian. It is concluded that injector electron accelerators with constant wave phase-velocity are completely competitive with and as capable as waveguide grouper accelerators with variable wave phase-velocity. Orig. art. has: 4 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-technical Institute, AN UkrSSR)

Card 3/4

constant phase velocity that is close to the speed of light. The accelerating system of such an injector can be constructed from the same elements as are the principal accelerating sections, and it is easy to obtain small variations in the phase velocity of the wave after calculation of the variation in the iris waveguide temperature. If the above-stated requirements are provided for in the injector accelerator with wave of constant phase velocity, then this accelerator's advantages over waveguide groupers, which have a wave of variable phase velocity, are obvious. Besides simplicity of design and manufacture, the injector accelerators with wave of constant phase velocity are less sensitive to variation in the current load, and their frequency may be adjusted in a range of several mc, maintaining their characteristics and not requiring especially close tolerances during construction. The dynamics governing particles in an injector accelerator with constant wave phase-velocity are comparatively easy to calculate. During investigation of these injector accelerators it was found that satisfaction of the optimum conditions governing the capture of electrons into the accelerated state necessitates eliminating the parasitic modulation of the electrons by a high-frequency field during input coincident transition. The latter modulation arises because of the sharp difference of the wave's phase velocity in transition section and in the regular iris waveguide.

L 45253-65 EPA(w)-2/EWT(m)/EWA(m)-2 Pt-7/Pab-10 IJP(c) GS
ACCESSION NR: AT5007933 S/0000/64/000/000/0440/0443

AUTHOR: Vishnyakov, V. A.; Grishayev, I. A.; Zykov, A. I.; Ostrovskiy, Ye. K.

TITLE: Injector electron accelerator with wave of constant phase velocity

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 440-443

TOPIC TAGS: high energy accelerator, traveling wave electron accelerator, phase velocity, waveguide

ABSTRACT: The characteristics of linear high-energy electron accelerators (LUE) are mainly determined by the parameters of the accelerated beam after the injector portion of the accelerator. The injector accelerator is intended to form a relativistic current of electrons (energy 5 to 6 Mev) with diameter 4 to 6 mm not diverging more than 10^{-3} radian. The energy spread of the accelerated electrons must not exceed 10%, and the phase width of the bunch 20°. The number of electrons incident upon the target per second must amount to about 10^{13}. Injector electron accelerators (ILUE) are ordinarily designed by proceeding from the above-indicated prerequisites. The present report discusses the injector accelerator with wave of

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L 45257-65
ACCESSION NR: AT5007932

2

25, 12.5, 6.25, 3.125, 1, and a single absence. (Note. The half-width is the width of the energy spectrum at a level half the current maximum.) The design and construction of the electron injector and the remaining parameters of the accelerated beam were discussed by V. A. Vishnyakov et al. (same conference p. 440). The present report discusses matters relating to the adjustment of the accelerator: the system's electrodynamic and loaded characteristics, the accuracy of construction of the sections, their resonance frequencies, group velocity and damping, shunt resistance and partial power of the principal accelerating harmonic. Orig. art. has: 6 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-technical Institute, AN UkrSSR); Nauchno-issledovatel'skiy institut elektro-fizicheskoy apparatury imeni D. V. Yefremova GKAE SSSR (Scientific-Research Institute of Electrophysical Equipment GKAE SSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: EE, NP

NO REF SOV: 000 OTHER: 000

Card 3/3

L 45252-65
ACCESSION NR: AT5007932

gen pulse thyratron switching. A generator-amplifier having metal-ceramic triodes with quartz frequency stabilization of the master circuit is used for excitation of the klystrons. The generator signal is amplified by a separate klystron and is propagated along waveguide transmission lines by the accelerator, entering into the klystrons of the above-mentioned injector and ten accelerating sections. The power at the output of the accelerating sections is absorbed in carborundum chargers. The vacuum in the accelerator and in the high power waveguide lines is attained by means of ion-absorption pumps, which are set up at the inputs of the sections and near the vacuum-separator cones. Ridding the electron beam of secondary products and focusing at the target are carried out with two reversible magnets and five quadrupole lenses. A transformer complex and direct-current sources are used for the system's regulated power supply. The high-frequency power supply system, which consists of klystron amplifiers, waveguide and co-axial transmission lines, and automatic phasing system, and also the control, locking, and signal panels are placed in a special room. The rated accelerator parameters are: 360-Mev electron energy at spectrum maximum; 5% half-width of energy spectrum $\Delta W/W$; 1 μamp full acceleration current at output of parallel-transfer system (mean) for 5% half-width and $N = 50$/sec; 0.2 cm beam diameter at output of parallel-transfer system; 1.5 μsec current pulse; frequency (number per second N) of bunches of current pulses - 50,

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L 45257-65 EPA w)-2/EWT(m)/EWA(m)-2 Pt-7/Pab-10 IJP(c) GS
ACCESSION NR: AT5007932 S/0000/64/000/000/0435/0439

AUTHOR: Val'ter, A. K.; Grishayev, I. A.; Dem'yanenko, G. K.; Zykov, A. I.; Zeytlenok, G. A.; Malyshev, I. F.; Turkin, F. F.; Khokhlov, V. K.; Makhnenko, L. A.

TITLE: Linear traveling-wave electron accelerator with 360-Mev output energy

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 435-439

TOPIC TAGS: high energy accelerator, traveling wave electron accelerator, injector, waveguide

ABSTRACT: One of the stages in the development, at Khar'kov, of the linear electron accelerators was the construction of a 360-Mev accelerator, with accelerating track divided into 11 sections consisting of a short injector and 10 sections 4.5 meters each. During colliding beam experiments the sixth section is absent, in its place being the magnets of the injecting devices of the storage rings. The electron injector and the accelerating sections are located in a concrete bunker. Klystrons with nominal power of 20 Mw in the pulse are used for the high-frequency power supply. Capacitive energy storers are used in the klystron modulators with hydro-

Card 1/3

ALIKHANYAN, A.I.; GARIBYAN, G.M.; LORIKYAN, M.P.; VAL'TER, A.K.; GRISHAYEV, I.A.; PETRENKO, V.A.; FURSOV, G.L.

Ionization loss of energy by fast electrons in thin films. Zhur. eksp. i teor. fiz. 44 no.3:1122-1124 Mr '63. (MIRA 16:3)
(Ionization) (Electrons)

GRISHAYEV, I.A. [Hryshaiev, I.O.]; DEM'YANOV, A.V. [Dem'ianov, O.V.]; SIKORA, D.I.; SHRAMENKO, B.I.

Efficiency of a secondary emission monitor in the 15-70 Mev. energy range. Ukr. fiz. zhur. 8 no.9:1029-1030 S '63. (MIRA 17:8)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

GRISHAYEV, I.A. [Hryshaiev, I.O.], [illegible], [illegible], A.M. [Shenderovych, O.M.]

Formation of short-front pulses of a magnetic field in inflector and deflector devices. Part 1. Ukr. fiz. zhur. 8 no.8:851-868 Ag '63.

Formation of short-front pulses of a magnetic field in inflector and deflector devices. Part 2. 869-876 (MIRA 16:11)

1. Fiziko-tekhnicheskiy institut, AN Ukr.SSR, Kharkov.

GRISHAYEV, I.A.; IL'IN, O.G.; [illegible]

Formation of short magnetic field pulses in a ferrite magnet.
Prib. i tekh. eksp. 8 no.4:[illegible] (MIRA 16:12)

1. Fiziko-tekhnicheskiy institut AN Ukr.SSR.

L 11398-63

S/120/63/000/002/004/041

Extractor for linear electron...

$\Delta\mathcal{E}/\mathcal{E} = \pm$ 0.003, and has an energy passband of $\Delta\mathcal{E}/\mathcal{E} = \pm$ 0.05 at 50 percent efficiency. Detailed specifications are given. There are two figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR (Physico-Technical Institute, Academy of Sciences Ukrainian SSR)

SUBMITTED: November 29, 1961

ja/lla
Card 2/2

L 11398-63 EWT(m)/BDS/ES(w)-2 AFFTC/ASD/SSD Pab-4

S/120/63/000/002/004/041

62
61

AUTHOR: Grishayev, I. A., Kondratenko, V.V., Petrenko, V.V., Popov, A. T., and Skuiko, V. A.

19

TITLE: Extractor for linear electron accelerators of up to 90 Mev energy

PERIODICAL: Pribory i tekhnika eksperimenta, March-April 1963, v. 8, no. 2, 26-28

TEXT: The article discusses design, experimental investigation, and adjustment of a system for achromatic parallel extraction of a beam of electrons from a linear accelerator. This system makes possible one or two 90° bends in the beam. The extractor provides at least 50 percent efficiency, is capable of beam-energy mono-chromatization of up to

Card 1/2

AUSLENDER, V.L., GRISHAYEV, I.A., ILIN, O.G., SHENDEROVICH, A.M.

"Arrangement for acculmulation electrical system with the ~~nge~~ energy of 100 MEV."

Report submitted to the Intl. Conf. on High Energy Physics and Nuclear Structure, Geneva, Switzerland 25 Feb - 2 Mar 1963

GRISHAYEV, I.A., TOLSTOY, A.E., YEVSEYEV, G.I., ARTEMOV, V.I.

"Magnetic system acculmulation arrangement for experiments in reception of electronic beam with energy of 100 MEV."

Report submitted tp the Intl. Conference on High Energy Physics and Nuclear Structure, Geneva, Switzerland 25 Feb-2 Mar 1963

Energy and phase ...

S/185/62/007/010/003/020
D234/D308

ASSOCIATION: Kharkivs'kyy derzhuniversytet (Kharkiv State University)

SUBMITTED: March 12, 1962

Card 3/3

Energy and phase ... [illegible]/007/010/005/020 [illegible]

are made for an [illegible] of about 7 Mev and the wavelength [illegible] 10.7 cm. Generalized relations [illegible] [illegible] obtained, from [illegible] extrapolation when injection [illegible] more than [illegible] of the (-35° to -45°) and [illegible] of phase instability if the [illegible] between [illegible] and 7.5 Mev, parameters can be [illegible] 1.5. These intensity and the [illegible] field tions [illegible] respond [illegible] about 6 Mev, [illegible] cor- the accelerator, not [illegible] of the [illegible] in thank I. A. [illegible] design. The authors and V. V. [illegible] the calculations most important [illegible] are 10 figures. The [illegible] as follows: J. Swi- hart, E. Akeley, [illegible] 1953.

Card 2/3

GRISHAYEV, I. A.

S/185/62/007/010/003/020
D234/D308

AUTHORS: Kharchenko, [illegible], Hryshayev, I. O. and Nekrashevych, O. H.

TITLE: Energy and phase characteristics of a linear electron accelerator with wave phase velocity equal to the velocity of light

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 10, 1962, 1051-1060

TEXT: The authors study the motion of an electron in a waveguide, the wave velocity being constant and equal to that of light; the accelerating field intensity is also constant. Asymptotic final phase (for an infinitely long waveguide) and the output energy are plotted against injection phase. There are two domains, in one of which the energy is a periodic function of the phase and on the average remains constant. Optimum beam length and density are discussed. The conclusions allow a qualitative estimation of the parameters of an accelerator of finite length. Design calculations

Card 1/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000616900025-6

Determining the principal ...

S/185/62/007/[illegible]/[illegible]03/016
0299/D302

ASSOCIATION: Uzhhorods'kyy derzhuniversytet (Uzhhorod State University); Fizyko-tekhnichnyy instytut (Physicotechnical Institute), Kharkiv

SUBMITTED: May 4, 1961

Card 4/4

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000616900025-6

cross sections measured by means of thin specimens. The experimen-
tal determination of the photoneutron yield in thick specimens is
also of practical interest. Two possible fields of application are
considered: Protection against neutrons in work with [illegible],
and in the design of compact powerful γ-ray [illegible] for prospec-
ting of mineral resources on a large scale. As an example, the iden-
tification of oil and water strata is considered, based on the dif-
ferent photonuclear properties of the respective isotopes. Further,
the experimental photoneutron yields from thick specimens, can be
used for determining the integral cross-sections of photonuclear
reactions; the Belen'kiy-Tamm spectrum permits solving the corres-
ponding integral equation without the use of approximate methods.
There are 2 figures, 1 table and 24 references: 15 Soviet-bloc and
9 non-Soviet-bloc. The 4 most recent references to the English-lan-
guage publications read as follows: L. Katz, A.G.W. Cameron, Can.
J. Phys., 29, 518, 1958; R.L. Brown and G.J. [illegible], Rev. Sci.
Instr., 27, 696, 1956; E. Blaine Toms, E. Stephens, Phys. Rev., 108,
77, 1957; W.C. Barber, W.D. George, Phys. Rev., 116, 1551, 1959.

Determining the principal ...

veloped; thereby the Belenkiy-Tamm equilibrium-spectrum was used for calculating the photoneutron yields for thick absorbers (U, Bi, Pb, Cu, Al and C); the calculations involved use of the excitation functions of γn-reactions for these elements, as known at that time; in the case of Pb, these functions differed from investigator to investigator. In order to ascertain the reasons for this discrepancy, the authors investigated the photoneutron yield in Pb, for electron energies of 10.5 to 20.5 Mev. The experiments were conducted at the linear accelerator of the Physicotechnical Institute of the AS UkrSSR. Similar measurements were also carried out by W.C. Barber and W.D. George in the USA (Ref. 14: Phys. Rev., 116, 1551, 1959). The results of Ref. 14 (Op.cit.) were in agreement with the present work, yet the experimental procedure differed somewhat; it is noted that the use of a spectrum, different from the Belenkiy-Tamm spectrum, did not give satisfactory results in Ref. 14 (Op. cit.). Hence the Belenkiy-Tamm spectrum can be successfully used for calculating the photoneutron yield in the energy range under consideration; such calculations, in conjunction with experimental measurements in thick specimens, can be also used for verifying the

S/185/62/007/002/003/016
D299/D302

AUTHORS: Hryshayev, I.O., Parlah, O.M., Sikora, D.I., Shkoda-Ul'yanov, V.O., and Shramenko, B.I.

TITLE: Determining the principal characteristics of photonuclear reactions of certain chemical elements and their possible use in practice

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 2, 1962, 138 - 143

TEXT: The work was reported to the Ukrainian Conference on the Peaceful Uses of Atomic Energy, Kyyiv, March 1961. The determination of the yield and of the cross section of photonuclear reactions as a function of the energy of the incident photons, is important for understanding the interaction mechanism of photons and nuclei. The difficulties encountered in measuring the photoneutron yield and the cross sections are reviewed. These difficulties can be overcome by using thick specimens instead of thin ones, and a monochromatic electron-beam instead of a continuous photon spectrum. In the references, theoretical- and experimental methods were de-

Card 1/4

GRISHAYEV, I.A.; KHEYFETS, M.I.; SHENDEROVICH, A.M.

Errors in electron recording due to scattering on the walls of the donut and in the layer of air in front of the counters. Part 2. Prib. i tekh. eksp. 7 no.2:46-49 Mr-Ap '62. (MIRA 15:5)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Electrons--Scattering) (Betatron)

GRISHAYEV, I.A.; KHEYFETS, M.I.; SHENDEROVICH, A.M.

Errors in electron recording due to scattering on the walls of the donut and in the layer of air in front of the counters. Prib. i tekh. eksp. 7 no.2:42-46 Mr-Ap '62. (MIRA 15:5)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Electrons--Scattering) (Betatron)

27190

S/056/61/041/002/011/028
B102/B205

The problem of errors due to the "dead"

88, 1936.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR
(Institute of Physics and Technology of the Academy of
Sciences Ukrainskaya SSR)

SUBMITTED: January 27, 1961

Card 6/7

The problem of errors due to the "dead" ...

a_i and b_i are not greater than unity. The spread is given by $D_M = nT/(1+\lambda n/f)^3 = nT(1-3\lambda n/f)$. An analysis shows that the counting losses due to the dead time depend largely on the relation between τ, f, and the pulse duration. In general, the counting losses decrease with increasing f and decreasing pulse duration, the mean intensity remaining unchanged. If the counting losses for $t_u \gg \tau$ increase by a factor of Q, as compared to the case with constant intensity (in many cases, Q reaches values of the order of some ten thousand), then the counting losses for $t_u \sim \tau$ will deviate only slightly from those found at constant intensity. If $f\tau \gtrsim 1$, they do not differ any longer, and all statistical relations are the same for both cases. They also remain unchanged if the condition $f\tau \gg 1$ is not fulfilled, and τ is an integral multiple of the number of periods. The results obtained here indicate that the h-f pulsation of the beam in lineacs has no influence on experimental errors due to the dead time. There are 2 figures and 7 references: 3 Soviet and 4 non-Soviet. The two most important references to English-language publications read as follows: L. Chu, W. Hansen. J. App. Phys. 18, 996, 1947; L. J. Shiff. Phys. Rev. 50,

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The problem of errors due to the "dead"

$$\overline{M} = fTe^{-(\lambda+1)n/f}\left\{1 - \exp\left[-\int_0^{t_u} \eta(t)\,dt\right] + \int_{t_u}^{t_u} \eta(t) \exp\left[-\int_{t-t_u}^{t} \eta(t')\,dt'\right] dt\right\}. \quad (13b)$$

$$\overline{M} = fTe^{-\lambda n/f}\{1 - e^{-n/f}\}. \quad (13c)$$

If $f \gg n$, these formulas can be reduced to

$$\overline{M} = nTe^{-\lambda n/f}\left\{1 + n\left(a_1 - \frac{1}{2} - b_1 + b_1^2/2\right)/f\right\},$$

$$\overline{M} = nTe^{-(\lambda+1)n/f}\{1 - n(a_2 + b_2^2/2)/f\}, \quad (16a)$$

$$\overline{M} = nTe^{-\lambda n/f}\{1 - n/2f\}, \quad (16b)$$

$$a_1 = \left(\frac{f}{n}\right)^2 \int_0^{t_u - t_1} \eta(t)\left[\int_t^{t+t_1} \eta(t')\,dt'\right] dt, \quad b_1 = \frac{f}{n}\int_0^{t_u - t_1} \eta(t)\,dt, \quad (16c)$$

$$a_2 = \left(\frac{f}{n}\right)^2 \int_{t_2}^{t_u} \eta(t)\left[\int_{t-t_2}^{t} \eta(t')\,dt'\right] dt, \quad b_2 = \frac{f}{n}\int_0^{t_2} \eta(t)\,dt. \quad (17)$$

Card 4/7

$$\bar{M} = fT\{1 - e^{-n/f}\}, \qquad D_M = fTe^{-n/f}\{1 - e^{-n/f}\},$$
$$D_L = fT\{n/f + e^{-n/f} - e^{-2n/f} - ne^{-n/f}/f\}. \tag{6}$$

f≫n: $\bar{M} = nT(1-n/2f)$, $D_M = nT(1-n/f)$, $D_L = \bar{L} = n^2T/2f$. 2) τ is greater than the interval between two pulses. Using Shiff's formula

$$M = fT\int_0^{t_u} \eta(t)\exp\left(-\int_{t-T}^{t} \eta(t')dt'\right)dt,$$

the following formulas are obtained for the mean counting losses for the three cases illustrated in Fig. 1:

$$\bar{M} = fTe^{-\lambda n/f}\left\{e^{-n/f}\int_0^{t_u-t_1}\eta(t)\exp\left[\int_t^{t+t_1}\eta(t')\,dt'\right]dt - e^{-n/f} + \exp\left[-\int_0^{t_u-t_1}\eta(t)\,dt\right]\right\}. \tag{13a}$$

Card 3/7

conditions in the general case at any relation between dead time and pulse interval, and to calculate the mean number and the spread of the number of counting losses. This was the aim of the authors. They assumed that: 1) the pulse-repetition frequency f and the dead time τ are constant and not subjected to any fluctuations; 2) the distribution of the number of particles incident upon the counter obeys the Poisson law; 3) $n = f\int_0^{t_u} \eta(t)dt$, where $\eta(t)$ denotes the intensity (mean number of pulses per sec). If T is the time of experiment, then nT particles will incide on the counter, and $nT = \bar{M} + \bar{L}$, where $\bar{M}$ is the mean number of counts, and $\bar{L}$ is the mean number of counting losses. The spreads are denoted by D_M and D_L, respectively, and the pulse duty factor is assumed to be greater than 2. Results: 1) τ is smaller than the interval between two pulses; $t_u \gg \tau$, $nQ\tau \ll 1$: $\bar{M} = nT(1-nQ\tau)$; $D_M = nT(1-3nQ\tau)$, $D_L = \bar{L} = n^2 Q T \tau$. $t_u <$

27190

S/056/61/041/002/011/028
B102/B205

21.6000

AUTHORS: Grishayev, I. A., Shenderovich, A. M.

TITLE: The problem of errors due to the "dead" time of counters operating in conjunction with pulsed sources

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 2(8), 1961, 410-416

TEXT: Theoretical problems of the counting-loss determination in counters whose dead time is shorter than the interval between the pulses have been studied earlier. This condition is, however, not always fulfilled in practice. In cyclic accelerators, for example, the pulsation frequency of the beam is equal to the period of revolution ($\sim 10^{-8}$ sec), whereas the dead time of most detectors is longer than 10^{-8} sec. The dead time may even become very great compared to the pulsation frequency as, e. g., in traveling-wave lineacs when using generators of the 10-cm range (period: $3 \cdot 10^{-10}$ sec). It is, therefore, important to examine the statistical

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S/058/63/000/001/015/120
A062/A101

electrical contact between them is realized by mechanical ties in the places where the system is connected to the input and output matching transformers. The resonators of the main section are disposed tightly in a copper tube which is also a vacuum housing. The precision of manufacture of the accelerating system (diameter of the resonators and diaphragm apertures) is $\pm$ 0.01 mm. The source of electrons is an electron gun operating under the tension of 79 kV (the corresponding electron velocity is 0.5c); the current is 1 amp. in a pulse. The pumping out of the vacuum volume of the accelerator is effected by 5 diffusion pumps; the operating pressure in the klystron amplifier is $2 \cdot 10^{-7}$ mm Hg, in the remaining space $3 \div 5 \cdot 10^{-7}$ mm Hg. Measurements have shown that the maximum intensity and energy are attained in the accelerator at the frequency 2796 Mc/s. The mean current of the accelerated electrons is 10 μA for a pulse length of 1 μsec. The diameter of the beam (at the output) under the optimum focusing is 3 - 4 mm, the spectrum width - 6%.

A. Fateyev

[Abstracter's note: Complete translation]

3/058/63/000/001/015/120
A062/A101

24 6730

AUTHORS: Sinel'nikov, K. D., Grishayev, I. A., Grizhko, V. M., Fisun, A. N., Zykov, A. I., Kitayevskiy, L. Kh.

TITLE: A 30 MeV energy linear travelling-wave electron accelerator

PERIODICAL: Referativnyy zhurnal, Fizika, no. 1, 1963, 39 - 40, abstract 1A374 (In collection: "Elektron. uskoriteli." Tomsk, Tomskiy un-t, 1961, 3 - 9)

TEXT: The authors describe a 30 MeV linear electron accelerator designed at the Physico-technical Institute of the Academy of Sciences of the Ukrainian SSR. The accelerator consists of two sections connected with each other - the injector section and the main section (with a constant wave phase speed); the length of the main section is 2.8 m, the value ka = 2.48 (k - wave vector, a - waveguide radius). The two sections are energized by one klystron power amplifier, excited by a magnetron generator. The power dissipated in the main section and in the output load is ~10 Mw (in the load 3.3 Mw); the field intensity is then 150 kV/cm. The accelerating system is composed of separate resonators; the

Card 1/2

68805

The Experimental Determination of the Power of the Submillimeter Range in a Magnetic Undulator

S/020/60/131/01/016/060
B013/B007

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk USSR (Institute of Physics and Technology of the Academy of Sciences of the UkrSSR)

PRESENTED: September 16, 1959, by M. A. Leontovich, Academician

SUBMITTED: September 1, 1959

Card 4/4

The Experimental Determination of the Power of the Submillimeter Range in a Magnetic Undulator

S/020/60/131/01/016/060
B013/B007

50 to 67 μ. The main part of the lines produced is in the latter range. At present, measurements of the entire power of radiation of the entire spectrum investigated are being carried out, and preparations are made for recording the spectrum. Figure 1 shows the scheme of the device. The elimination of background is briefly dealt with. The power of electron radiation in the undulator is proportional to H^2, and therefore $\frac{P(H_1)}{P(H_2)} = \frac{H_1^2}{H_2^2}$ holds. Herefrom and from an other equation it is possible to calculate the absolute amount of radiation intensity for a given magnetic field. The results obtained by the measurements are given in table 1. The authors thank K. D. Sinel'nikov, Academician of the AS UkrSSR, for the suggested theme, and Ya. B. Faynberg for discussing the results obtained. There are 1 figure, 1 table, and 3 references.

Card 3/4

The Experimental Determination of the Power of the Submillimeter Range in a Magnetic Undulator

S/020/60/131/01/016/060
B013/B007

using the double Doppler-effect of frequency transformation, makes it possible to bridge the entire range of electromagnetic oscillations from 1 mm to visible light. The level of the emitted power may actually be made sufficiently large, even in the case of an incoherent radiation. For the frequency of radiation in a magnetic undulator for the free space $\nu = v/[l_0(1 - \beta\cos\vartheta$ holds. Here v denotes electron velocity, l_0 = the period of magnetic structure; $\beta = v/c$; ϑ = the angle between the direction of motion and the direction towards the observer. The production of electromagnetic oscillations may, in a sufficiently wide frequency-range, be determined by measuring electron energy (with constant l_0). The undulator used in the present paper consists of separate electromagnets, in which it was possible to eliminate completely the harmful components of the magnetic field. 90% of the input amperage passed through the entire undulator. With the wave guide dimensions used here, a discrete spectrum of electromagnetic oscillations was obtained because of the difference of the excited oscillations. This spectrum is subdivided into the two principal ranges of 100 to 250 μ and

9.3260

68805

AUTHORS: Grishayev, I. A., Kolosov, V. I., Myakota, V. I., Beloglazov, V. I., Yakimov, B. V.

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B013/B007

TITLE: The Experimental Determination of the Power of the Submillimeter Range in a Magnetic Undulator

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 1, pp 61 - 63 (USSR)

ABSTRACT: The present paper describes the preliminary results obtained by determining the summational mean power of the electromagnetic oscillations of the submillimeter range. The power to be determined is emitted by relativistic 17 Mev electrons in a magnetic undulator. With an average electron amperage of 4 μa, $\sim 10^{-7}$ w was obtained for the level of the mean power. The production of a radiation in the tenth-of-a-millimeter range and in the submillimeter range is of great practical interest. Such electromagnetic oscillations can at present be produced only by means of spark generators and heated bodies. However, the power levels obtained in this way are very low. The undulatory method of producing high-frequency oscillations, which is based upon

Card 1/4

83275

S/109/60/005/009/025/026
E140/E455

9,1300

AUTHORS: Grishayev, I.A., Zykov, A.I. and Kononenko, S.G.

TITLE: Matching of Diaphragmed Waveguide

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.9, pp.1549-1553

TEXT: Matching between a diaphragmed waveguide delay system and a rectangular waveguide is carried out by a matching transition. A reflection-factor meter employing a directional coupler is described. Two methods of obtaining travelling waves in the diaphragmed waveguide are described: 1) the method of adiabatic waveguide; 2) the method of series match. The use of an arbitrary load to measure SWR and reflection phase is described. There are 4 figures and 4 references: 3 Soviet and 1 English.

SUBMITTED: June 17, 1959, initially
February 29, 1960, after revision

Card 1/1

GRISHAYEV, I.A.; ZYKOV, A.I.

Effect of nonprecision in manufacture on the band properties of septate wave guide. Radiotekh. i elektron. 5 no.7:1182-1184 Jl '60. (MIRA13:6)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Wave guides)

87943

87120/60/000/004/002/025
E032/E414

Measurement of the Position and Current of a Pulsed Beam of Charged Particles

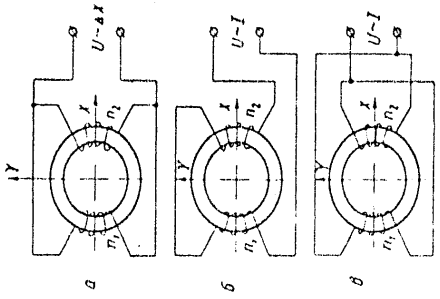

Рис. 1. Соединение обмоток катушек: а — для измерителя положения; б, в — для измерителя тока

Fig.1.

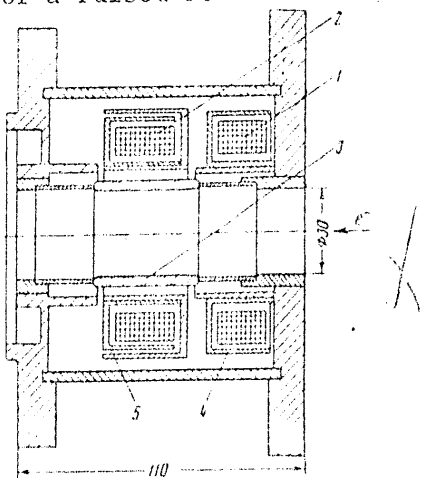

Рис. 3. Эскиз конструкции измерителя положения и тока пучка. 1 — катушка измерителя тока, 2 — катушка измерителя положения, 3 — стеклянная труба, 4 и 5 — экраны катушек

Card 5/5

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Measurement of the Position and Current of a Pulsed Beam of Charged Particles

In the final version of the device the position of the beam could be determined to an accuracy better than 0.1 mm with the beam current greater than 1 mA and pulse duration greater or equal to 0.5 μsec. The current detector has a sensitivity of up to 20 mV/mA and may be used in measuring pulsed currents of 5 to 10 μA per pulse. A sectional drawing of the position indicator is shown in Fig.3 (1 - coil of current indicator, 2 - coil of position indicator, 3 - glass tube, 4 and 5 - screens). A detailed description is given of the dimensions of the coils, the basic circuits of the ancillary electronics are reproduced. The authors thank G.N.Ivanov for taking part in the experiments and A.K.Val'ter for discussing the results obtained. There are 7 figures and 3 non Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physicotechnical Institute AS UkrSSR)

SUBMITTED: June 5, 1959

Card 4/5

Measurement of the Position and Current of a Pulsed Beam of Charged Particles

of such coils are necessary. The use of ferromagnetic toroidal cores leads to an increase in the magnitude of the signal and an improvement in the reproducibility of the pulse shape. When the beam is displaced parallel to the coils then, provided the dimensions of the coils in the direction of the displacement are greater than the possible displacements of the beam, the displacement of the beam will have no effect on the magnitude of the emf's induced in the two coils. When the coils are connected in series or in parallel (but not in a position) the induced emf's will add and the total signal will not change very much when the beam is displaced in any direction, provided the beam current remains constant. This method of connection, which is illustrated in the two lower diagrams in Fig.1, is used to measure the beam current and is similar to that described by Bess and Hanson (Ref.3). The system was designed with the help of "model" data obtained in experiments in which the charged particle beam was replaced by a straight line conductor carrying a current

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E032/E414

Measurement of the Position and Current of a Pulsed Beam of Charged Particles

developed position and current indicators for pulsed beams which are based on the magnetic interaction between special coils in the neighbourhood of the beam and the beam itself. The principle of the method is illustrated in Fig.1 in which the first diagram shows the beam position indicator and the other two diagrams show the beam current indicators. In Fig.1a the two coils n_1 and n_2 have identical parameters so that when the beam is displaced along the X-axis the emf induced in one of the coils will increase and that in the other coil will decrease. When the beam is in the central position, the signals induced in the two coils are equal. If the two coils are connected in opposition, as shown in Fig.1a the signal will be zero whenever the beam is central. When the beam is displaced along the X axis the polarity of the output signal will depend on whether the beam is deflected to the right or to the left, while the magnitude of the signal will depend on the magnitude of the beam displacement. In order to [illegible] displacements in two mutually perpendicular directions two pairs

Card 2/ 5

[illegible]

21-2/20

[illegible]
E052/E414

AUTHORS: Grishayev, I.A., Mochalnikov, N.I. and Ivanov, V.F.

TITLE: Measurement of the Position and Current of a Pulsed Beam of Charged Particles

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No.4, pp.17-23

TEXT: The control of the position and current of a charged particle beam is of particular importance in the case of charged particle accelerators, for example linear accelerators, where the beam must not deviate from the "axis" by more than 1 or 2 mm. Moreover, the position and current indicator should not affect the beam, i.e. it should not reduce its intensity, increase its divergence etc. It is claimed that all the beam position indicators described so far do not satisfy these requirements. For example, the pickup electrodes used in the cosmotron (Swartz Ref.1) were too large and not sufficiently sensitive for use with electron linear accelerators. In the Stanford electron linear accelerator (Chodorow et al, Ref.2) the beam position indicator was in the form of a series of neutron counters and these are also claimed to be unsatisfactory because they detect only large deflections of the beam. The present authors have therefore

Card 1/5

GRISHAYEV, I.A.; TEREKHOV, B.A.; MYAKUSHKO, L.K.; FURSOV, G.L.

Two designs of a titanium ion-sorption pump. Prib. i tekh. eksp. no.3:144-145 My-Je '60. (MIRA 14:10)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Vacuum pumps) (Titanium)

PHASE I BOOK EXPLOITATION SOV/5333

Pshelintseva, G. M., ed.

Uskoriteli; sbornik statey (Accelerators; Collection of Articles) Moscow, Atomizdat, 1960. 121 p. Errata slip inserted. 5,000 copies printed.

Scientific Ed.: B.N. Yablokov; Ed.: G.M. Pshelintseva; Tech. Ed.: N.A. Vlasova.

PURPOSE: This collection of articles is intended for scientists and engineers engaged in the construction and operation of particle accelerators.

COVERAGE: These original articles treat specific problems arising in the operation of present-day accelerators, particularly linear electron accelerators. A new accelerator put into operation at the Ukrainskiy fiziko-tekhnicheskiy institut (Ukrainian Physico-technical Institute) is described, and problems in the dynamics of particles in linear electron accelerators are discussed. New methods are discussed for the extraction of particles from accelerators. Problems associated with the shaping of permanent magnetic fields and the acceleration of multicharged ions are also treated. The changeover of the series cyclotron to the phasotron acceleration mode with a view to increasing the energy of accelerated particles is described, and some problems connected with the bunching of particles are elaborated. No personalities are mentioned. References accompany each article.

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[illegible], V.I., M.P. [illegible], V.I. [illegible], and L.A. Sarkisyan. [illegible] of Axially Symmetric Magnetic Fields in Betatron Chambers

[illegible], V.P., Yu. [illegible], Yu. A. [illegible], and L.I. [illegible]. Calculation of Multiple [illegible] Beam in Cyclotrons

[illegible], V.P., B.I. [illegible], and [illegible]. Koliga. [illegible] With Variable Magnetic Fields [illegible]

[illegible], V.I., A.P. [illegible], and [illegible] Shielding and Induced [illegible]

GRISHAYEV, I.A. [Hryshaiev, I.O.]; KOLOSOV, V.I.; MYAKOTA, V.I. [M'iakota, V.I.]; YAKIMOV, B.V. [IAkymov, B.V.]

Eliminating the effect of a harmful magnetic field component in a magnetic undulator. Ukr.fiz.zhur. 4 no.6:810-812 N-D '59. (MIRA 14:10)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Magnetic fields) (Magnetic instruments)

GRISHAYEV, I.A. [Hryshaiev, I.O.]; TEREKHOV, B.A.; MYAKUSHKO, L.K. [M'iakushko, L.K.]; FURSOV, G.L. [Fursov, H.L.]

Titanium pump. Ukr.fiz.zhur. 4 no.6:750-754 N-D '59. (MIRA 14:10)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Titanium) (Air pump)

ZEYTLENOK, G.A.; RUMYANTSEV, V.V.; SMIRNOV, V.L.; FOMIN, L.P.; KHOKHLOV, V.K.; GRISHAYEV, I.A.; ZEYDLITS, P.M.

The rationale of high-energy linear-electron accelerator design. Atom. energ. 4 no.5:448-454 My '58. (MIRA 11:6)
(Particle accelerators)

S/058/60/000/005/003/040
A005/A001

An Electron Accelerator With 3,5 Mev Output Energy

accelerator input is 900 kw; the accelerator field intensity amounts hereat to 16.5 kv/cm. The accelerator output power (about 600 kw) is observed in a steel load with water cooling; approximately 300 kw are dissipated in the waveguide walls. An additional axisymmetrical magnetic field with an intensity up to 400 Gs is developed by solenoids for focusing the electrons along the waveguide axis. An electron gun with three electrodes serves as electron source, it operates pulsing synchronously with the magnetron generator and provides for a beam of 5-6 mm diameter at the accelerator input. The output parameters of the accelerator measured are: the current is about 20-30 ma in the pulse of 2 μsec duration, the average current is about 20-30 μ a; the beam diameter is 3-4 mm with the divergence angle of 7.10^{-4} - 3.10^{-3} radian; the energy beam half-width is about 8%.

ASSOCIATION: Fiz.-tekhn. in-t AN UkrSSR (Physico-Engineering Institute of the Ukrainian Academy of Sciences)

A.P. Fateyev

Translator's note: This is the full translation of the original Russian abstract.

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A005/A001

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Translation from: Referativnyy zhurnal, Fizika, 1960, No. 6, p. 29, # 13140

AUTHORS: Sinel'nikov, K.D., Zeydlits, P.M., Grishayev, I.A., Kitayevskiy, L.Kh., Akhiyezer, A.I., Faynberg, Ya.B., Selivanov, N.P., Khizhnyak, N.A.

TITLE: An Electron Accelerator With 3.5 Mev Output Energy

PERIODICAL: Tr. Sessii AN UkrSSR po mirn. ispol'zobaniyu atomn. energii. Kiyev, AN UkrSSR, 1958, pp. 16-23

TEXT: The authors describe a linear electron accelerator with a traveling wave of 3.5 Mev energy. A waveguide loaded with disks is used as accelerating system. The necessary law of wave phase velocity variation is brought about by variation of the diameter of the apertures in the disks. The 280-cm long waveguide is divided into three sections. In the first section, the phase velocity is varied from 0.5 to 0.97 c; in the second and third section it is equal to 0.98 and 0.99 c respectively. The electron equilibrium phase increases during the acceleration process; its initial value is equal to 45° and is chosen according to the optimum capture condition. The computational value of the h.f. power at the

Card 1/2

GRISHAYEV, F.P., inzh.

Boring and ripping machine for unloading frozen bulk materials.
Stroi. mat. 5 no.10:28-29 O '59. (MIRA 13:2)
(Building materials) (Loading and unloading)

VASIL'YEV, A.N. (Perm'); GRISHAYEV, A.I. (Perm')

More about the new type of drilling unit. Put' i put. khoz. 7 no.5:43 '63. (MIRA 16:7)

(Drilling and boring machinery)

GRISHAYEV, A. F.

"The Fluctuation of Blood Prothrombin of Sportswomen and of Nonsportswomen During Uncomplicated Pregnancy and During Toxicosis as a Result of It (Laboratory and Clinical Investigation)." Cand Med Sci, Kuybyshev State Medical Inst, Kuybyshev, 1955. (KL, No 15, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

GRISHAYEV, A.F.

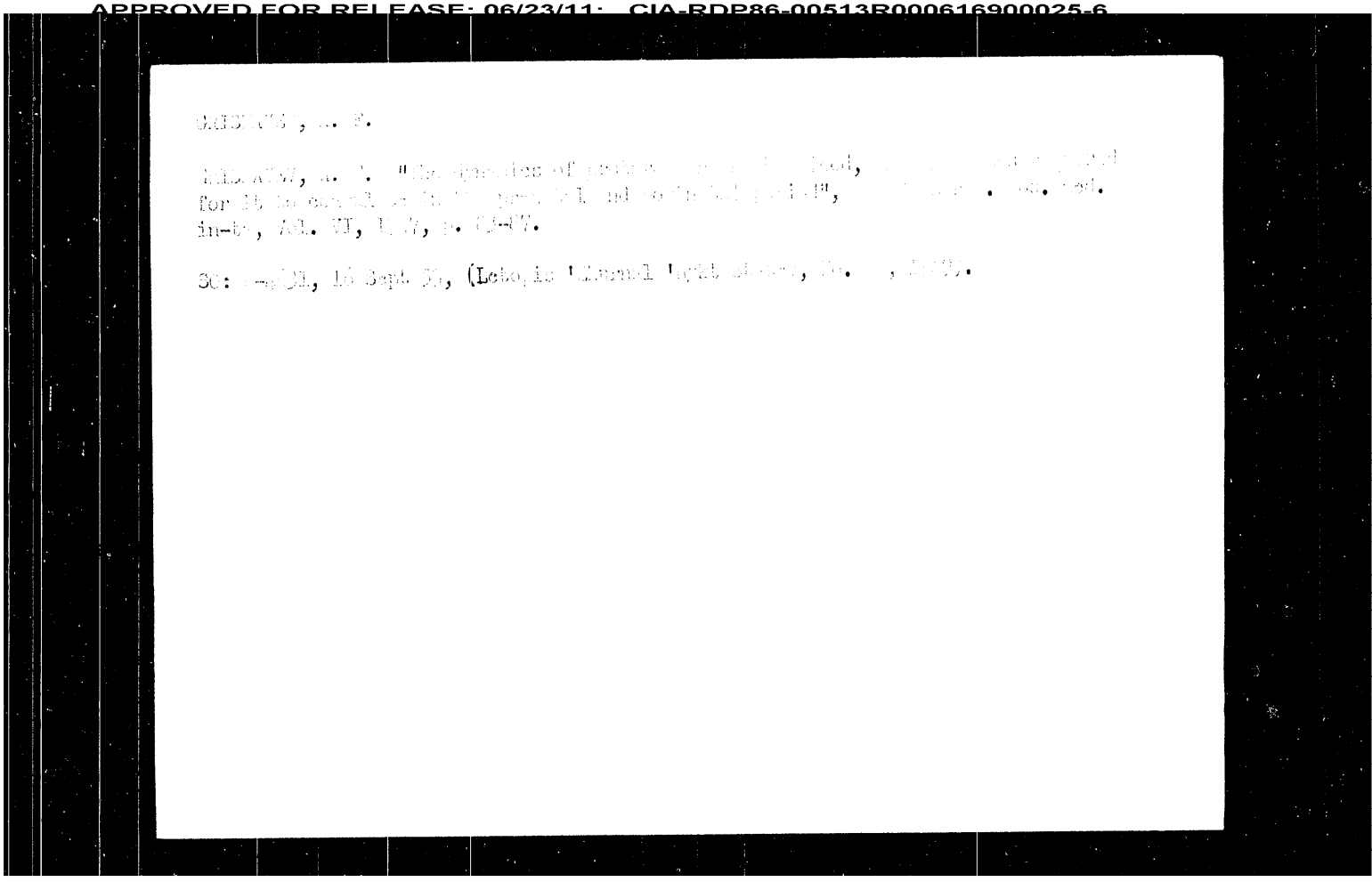
Problem of hypoprotheombinemia in pregnancy toxemias. Akush. gin. no.5: 78 Sept-Oct 1953. (CLML 25:4)

1. Saratov.

GRISHAYEV, A.F.

Dynamics of blood prothrombin in pregnancy. Akush. gin. no.2:43-45 Mar-Apr 1953. (CLML 24:3)

1. Of the Physiological Laboratory of Saratov Medical Institute.



ACCESSION NR: AT4037709

bulk of the electrolyte. This can be accomplished with the aid of centrifugal devices, or by using electrodes, diaphragms, and electrolytes with special chemical and physical properties. The latter method requires equipment which promises to be more economical, portable, simple, and reliable. The electrolysis of water may very soon become the basic method of supplying oxygen for manned space flights.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: PH, LS

NO REF SOV: 002 OTHER: 009

Card 2/2

ACCESSION NR: AT4037709 S/2865/64/003/000/0396/0400

AUTHOR: Grishayenkov, B. G.; Zablotskiy, L. L.; Ostapenko, O. F.; Semenov, Yu. M.; Fomin, A. G.

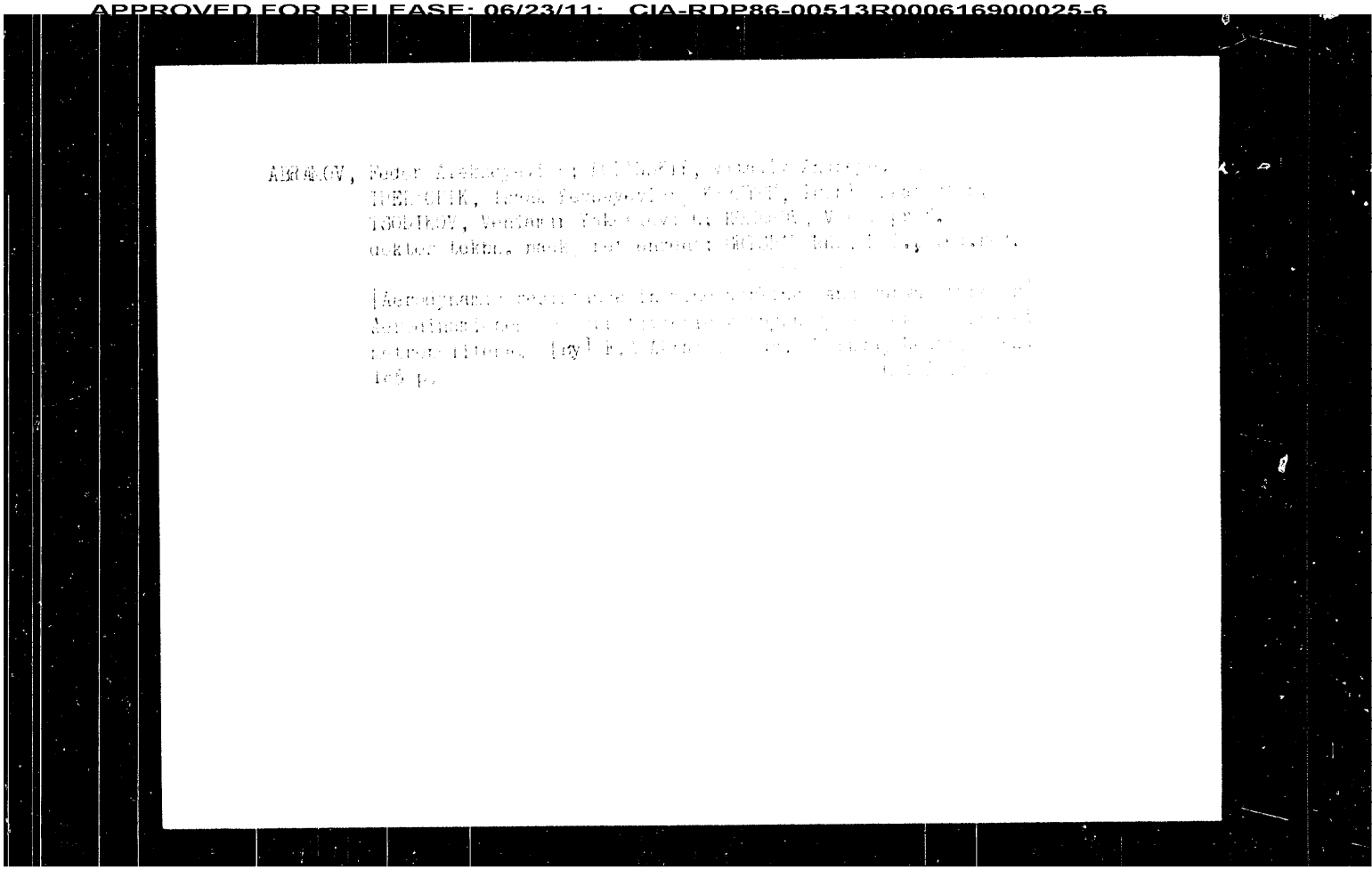
TITLE: Methods of obtaining oxygen by electrolysis of water under weightless conditions

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy* kosmicheskoy biologii, v. 3, 1964, 396-400

TOPIC TAGS: electrolysis, space flight, weightlessness, water, oxygen, air regeneration, life support, closed ecological system, manned space flight

ABSTRACT: For space flights of more than one month duration, it seems promising to develop systems of air regeneration in the space vehicle cabin based on re-utilization of human body wastes. This would minimize the amount of material to be stored aboard the ship. Electrolysis of the water formed by vital activity would be utilized as a source of oxygen for such a system. Electrolysis under weightless conditions requires the removal of the gases(oxygen and hydrogen) formed and the maintenance of continuous contact between the electrodes and the

Card 1/2



KONOGRAY, Valentin Polikarpovich; GRISHAYENKO,M.I., otv.red.; IL'IN-SKAYA,G.M., tekhn.red.

[How a mine is ventilated] Kak provetrivaetsia shakhta. Izd.2., perer.i dop. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 61 p.

(MIRA 14:5)

(Mine ventilation)

IYEVIN', I.K. [Ievins, I.], kand.tekhn.nauk; GRISHANS, O.Ya. [Grisans, O.], inzh.

The PLO-5 press for pressing small pieces of wood into building blocks. Stroi. i dor. mash. 7 no.9:25-26 S '62. (MIRA 15:10)
(Construction equipment) (Building blocks)

TOMASHEVICH, V.A., red.; BAZYLEV, T.A., red.; GRISHANOVICH, P.U., red.; ROGOVSKIY, I.T., red.; BEREZKIN, Yu.I., red.; SAVITSKIY, F.I., red.; BELEN'KAYA, I.Ye., tekhn. red.

[Collected articles on economic problems] Sbornik po ekonomicheskim voprosam. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1961. 163 p. (MIRA 16:2)

(White Russia--Economics)

TOMASHEVICH, V.A., red.; BAZYLEV, T.A., red.; BOROVIK, F.V., red.; YANCHENKO, S.Ye., red.; GRISHANOVICH, P.U., red.; SAVITSKIY, F.I., red.; BELEN'KAYA, I.Ye., tekhred.

[Collected articles on economics] Sbornik statei po politekonomii. Minsk, Izd-vo Belgosuniv. im. V.I.Lenina, 1959. 170 p. (MIRA 13:4)

1. Minsk. Universitet.
(White Russia--Economic conditions)

SUKHOVA, L.A.; GRISHANOVA, Ye.M.; [illegible], V.A.

Developing the technology of producing [illegible] for roofing paper. Trudy NIIAsbesttsementa no.IV:139-147 '63.

(MIRA 17:10)